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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/696,190

10/28/2003

Wolfgang Heinrich Alberstadt

81643/LPK

6577

7590

11/02/2004

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EXAMINER

LEE, PETER

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,190

Applicant(s)

ALBERSTADT ET AL.

Examiner

Peter Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☒ Claim(s) 5 and 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

“...segment A...” as written on pages 8 line 9 and page 9 line 9 is not in the drawings. It is purported to be in Fig. 3 however no such reference can be found in Fig. 3 or any of the other figures for that matter.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Reference part “9” seen in figure 9 is not explained or mentioned in the specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi in view of Nagafuji (US pg pub 2002/0051662).

Onishi teaches all of the limitations as taught above. Onishi does not teach the said bearing member being in an approximately ball shape.

Nagafuji teaches a similar fixing apparatus with a heating roller and pressure roller (fi. 2; note abstract). The fixing roller (fig. 3 part 12) is allowed to rotate due to ball bearings (fig. 3 part 16) that are configured around the circumference of the roller at each of the two axial ends. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the bearing members found in the fixing apparatus of Onishi be of a ball shape as explicitly taught in the fixing apparatus of Nagafuji. One of ordinary skill in the art would have been motivated to use the ball shaped bearings because the ball bearings can avoid giving an excessive load to the fixing roller, which is advantageous in any situation but especially when used in a high speed image forming apparatus as would be wanted (page 4 paragraph [0052]).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi in view of Olmstead (US pn 2633627)

Onishi teaches all of the limitations of the invention as shown above. In addition Onishi is seen to teach having the bearing members (ie. connecting elements) in close proximity to the flanges at the ends of the cylinder (see fig. 2). However Onishi does not explicitly show the cylinder body of the fuser roller having an annular groove with a half circle cross section.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Onishi (JP 2000214712). Onishi teaches a fixing roller (fig. 2 part 31) with a heat roller installed within (fig. 2 part 33; note paragraph [0019]) for a printer with internal heating element contact members (fig. 2 parts 382 and 412; note paragraph [0038]) (ie. internal heating elements), which has a housing around the said rollers (fig. 2 part H; note paragraph [0022]) (ie. cylindrical shaped body) and which has flanges (fig. 2 parts 37 and 40; note paragraph [0019]) that close off the ends, comprising: a connection that incorporates bearings at both ends (fig. 2 parts 58 and 59; note paragraph [0022] and [0028]), for the heat roller and flanges, that allow for revolving of the housing (ie. moveable in a rolling motion).

Onishi also teaches that the said flanges also consist of portions (fig. 2 parts 3711 and 4011; note paragraph [0033]) that have narrower diameters than the heat roller body (fig. 2 part 33) that allows for the flange portions to be fit into the heat roller body (ie. flange can be inserted into the body).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

It is Olmstead who teaches the long known practice of having an outer race (fig. 9 part 1) (ie. body of the fuser roller) having its raceway (fig. 9 part 3) (ie. annular groove) in the shape of a half circle to accommodate the ball bearings within as shown in Figs 8-11. Onishi and Olmstead are seen to be analogous art because they are from the same field of endeavor relating to a mechanism and apparatus arrangement that allows for rotation using ball bearings. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the outer race member (ie. body of the fuser roller) have an annular groove as a means for the ball bearings to be adapted within. One of ordinary skill in the art would have been motivated to use such an arrangement because it is well known in the art of bearings, particularly involving rotation of ball bearings, to configure the bearing support between two members such that the outer member will have a half circular cross section to support the shape of the ball bearings.

6. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi in view of Olmstead, and further in view of Chen (US pn 6224166).

Onishi and Olmstead teach all of the limitations regarding this and prior claims as seen above. They do not teach the flange member having a quarter circular shaped offset matched up to the connecting element, nor do they teach the flange and fuser roller body having chamfers, having a range of angles between 0-45 degrees, on the edges of the groove members that contain the connecting element.

It is Chen who teaches a rotating connection involving ball bearings where the inner race portions (fig. 2 and 3 parts 24 and 22) (ie. flange) and outer race elements (fig 2 parts 28 and 38) (ie. fuser roller body) are seen to have chamfered edge sections where the ball bearings (fig. 3

part 34) are placed in between. Further, the chamfered inner race portions can be seen to be essentially in the form of a quarter circle so as to adapt to the shape of the ball bearings (ie. connecting elements). The angle of chamfer found in Fig 3 of Chen can be seen to be essentially the same as seen in the drawings of the application, and therefore meet the limitation of being between 0 and 45 degrees.

The teachings of Onishi in view of Olmstead, and Chen are analogous art because they are from the same field of endeavor being a mechanism and apparatus arrangement that allows for rotation using ball bearings as a connecting element. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the chamfered inner and outer race elements, as seen in Chen, to put into the revolving invention taught by Onishi in view of Olmstead. One of ordinary skill in the art would know that this configuration for bearing support between 2 moveable members relative to each other is well known in the art. It is known that this configuration allows for greater strength of the rotating apparatus (col.3 lines 25-30).

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi in view of Suzuki (JP pn 2002108119).

Onishi teaches all of the limitations as shown above. Onishi does not teach the use of a heat reflecting element on the inside of the heater roller body.

It is Suzuki who teaches a fixing device that has heat reflectors (fig. 8 parts 219b and 119b; note paragraph [0042] – [0044]) inside of a heating roller. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize heat reflectors as taught by Suzuki inside of a heating roller of a fixing device as taught by Onishi. One of ordinary

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skill in the art would have been motivated to utilize the heat reflectors as seen in Suzuki in order to more effectively utilize the heat within the roller, which in turn will reduce the power required to heat the roller; whereas power conservation is desired (note: paragraph [0044])

Allowable Subject Matter

8. Claims 5 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The claimed limitations could not be found in the cited references.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

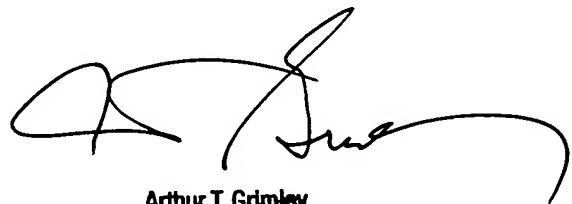
Miller et al. (US pn 4506936) teaches a revolving roller apparatus that employs a system of ball bearings similar to that laid out in the limitation of the current claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Lee whose telephone number is 571-272-2846. The examiner can normally be reached on mon-fri 9:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL 10/27/04

A handwritten signature in black ink, appearing to read 'Arthur T. Grimley', with a stylized, flowing script.

Arthur T. Grimley
Supervisory Patent Examiner
Technology Center 2800